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Brandisia rosea var. *flava* (Paulowniaceae): recollection and lectotypification

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ब्रांडिसिया रोसिया प्रभेद *फ्लावा* (पोलवोनिऐसी) : पुर्नसंग्रहण और लेक्टोटाइपिफिकेशन

समीरन पांडे, सुधांशु शेखर दाश, बिपिन कुमार सिन्हा

सारांश

ब्रांडिशिया रोसिया डबल्यू डबल्यू स्म. प्रभेद *फ्लावा* सी. ई. सी. फिश्च. एक अल्पज्ञात पौधा है जिसे लगभग 50 वर्षों के अंतराल के बाद भारत के अरूणाचल प्रदेश से पुर्नसंग्रहित किया गया है। प्रस्तुत शोध पत्र के द्वारा भविष्य में इसकी सही पहचान को निर्धारित करने के लिये इसके विस्तृत वर्गिकी विवरण, छायाचित्रों और वितरण मानचित्र दिया गया है। इस पौधे का लेक्टोटाइपिफिकेशन चयनित लेक्टोटाइप के फोटो के साथ प्रस्तावित किया गया है।

ABSTRACT

Brandisia rosea W.W. Sm. var. *flava* C.E.C. Fisch., a less known plant has been recollected after a period of more than half a century from Arunachal Pradesh, India. A detailed taxonomic description along with photographic illustration and distribution map is provided to facilitate future identification. Lectotypification of the name is proposed along with images of selected lectotype.

Keywords: *Brandisia rosea* var. *flava*, Recollection, Tawang District, Arunachal Pradesh, Lectotypification

INTRODUCTION

During our plant collection visit to Tawang District, Arunachal Pradesh in September 2016, an interesting epiphytic shrub was collected in flowering and fruiting condition (Figure 1). A thorough study of live material and available relevant literature (Hooker & Thomson, 1864; Kanjilal & al., 1939; Deyuan & al., 1998; Mill, 2001; Chowdhery & al., 2008) and comparison of herbarium specimens and images from ASSAM, CAL and K, the identity of the taxa was confirmed as *Brandisia rosea* W.W. Sm. var. *flava* C.E.C. Fisch.

The genus *Brandisia* (Hook. f. & Thomson, 1864) named after Sir Dietrich Brandis, a German-British Botanist, and Inspector of General of Forests in India (1864 to 1883), comprises of about 13 species in World, distributed in subtropical Asia (China, India, Laos, Myanmar, Thailand, Vietnam) (Deyuan & al., 1998; Mabberley, 2017).

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The genus earlier treated in the family Scrophulariaceae is now included in family of Paulowniaceae in the APG IV system (Angiosperm Phylogeny Group, 2016) due to its shrubby habit, leathery calyx and stellate hairs. In India the genus is represented by only three taxa viz. *B. discolor* Hook. f. & Thomson, *B. rosea* W.W. Sm. and *B. rosea* W.W. Sm. var. *flava* C.E.C. Fisch. (Deyuan & al., 1998; Kanjilal & al. 1939).

C.E.C. Fischer (1934) described *Brandisia rosea* W.W. Sm. var. *flava* C.E.C. Fisch. based on collection made by F. Kingdon-Ward in 1928 [Delai Valley, Arunachal Pradesh, *F. Kingdon-Ward* 8699 (CAL & K)]. This variety is differentiated from the typical by the presence of yellow flower as compared to red flowers. Literature scrutiny revealed that, the species forms continuity in its range of distribution in Eastern Himalaya from China to Bhutan (Deyuan & al., 1998; Mill, 2001). Only one specimen of the taxon is available in ASSAM, which was collected by J. Joseph (Arunachal Pradesh, Kameng District, 15.09.1964, *Joseph* 40023). No other authentic specimen found in any of the Indian herbaria. It is interested to note that, distribution of the taxa is only restricted to the western part of Arunachal Pradesh and the present collection forms the second collection after a gap of five decades. Therefore, a detailed description, an illustrative photo plate (Figure 2) along with the collection site map is provided to facilitate further studies.

TYPIFICATION

C.E.C. Fischer described *Brandisia rosea* var. *flava* based on collection made by F. Kingdon-Ward from Delai Valley (*F. Kingdon-Ward* 8699) and differentiated by yellow colour of corolla. On searching of multiple herbaria [A, ARUN, ASSAM, CAL, K] we could only locate two collections, one at CAL (*F. Kingdon-Ward* 8699, CAL0000018761) and another at K (*F. Kingdon-Ward* 8699, K000961206) which can be considered as original materials. On critical examination of this sheet, we found that, the specimen preserved at CAL (CAL0000018761)

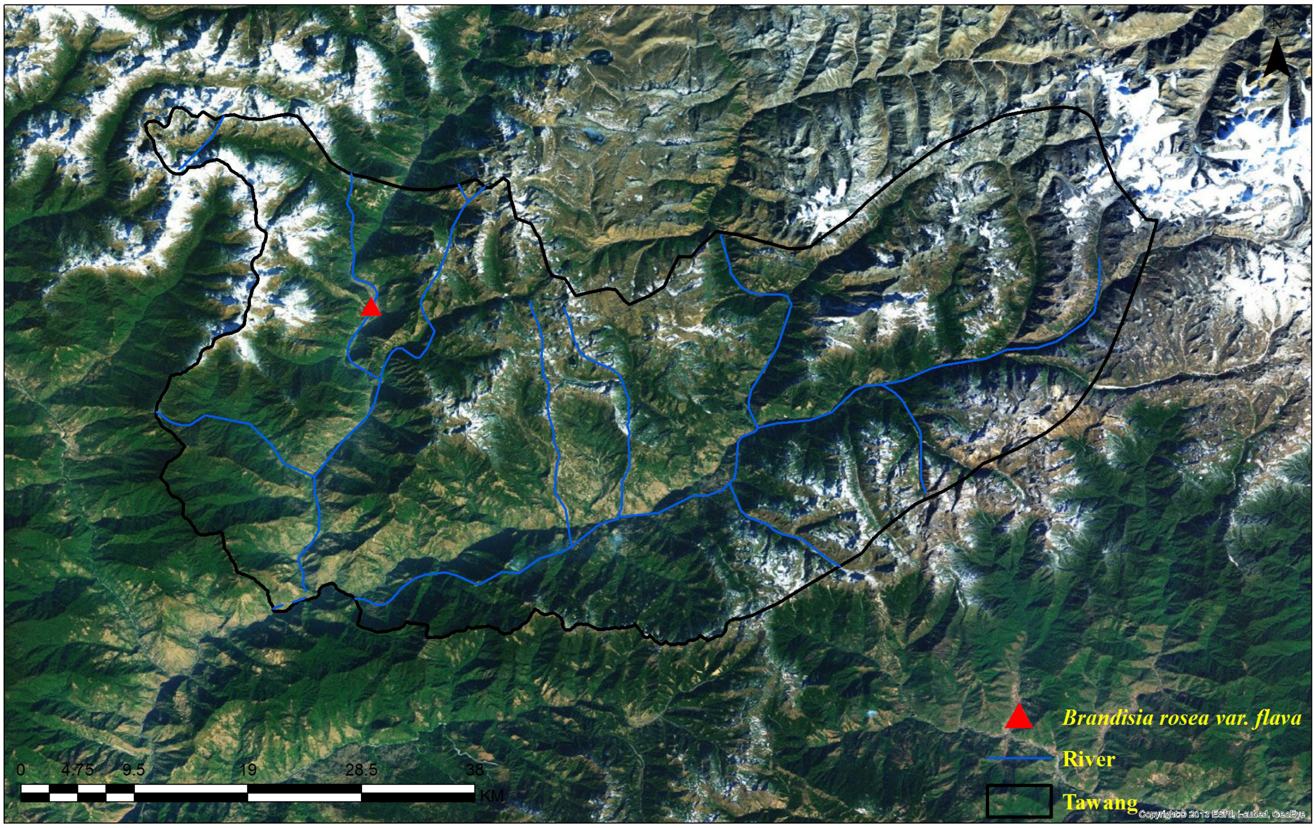
N
0
4.75
9.5
19
28.5
38
KM
Brandisia rosea var. flava
River
Tawang
Copyright:© 2013 ESRI, i-cubed, GeoEye

Fig. 1: Map showing the map of collection site of *Brandisia rosea* W.W. Sm.var. *flava* C.E.C. Fisch.

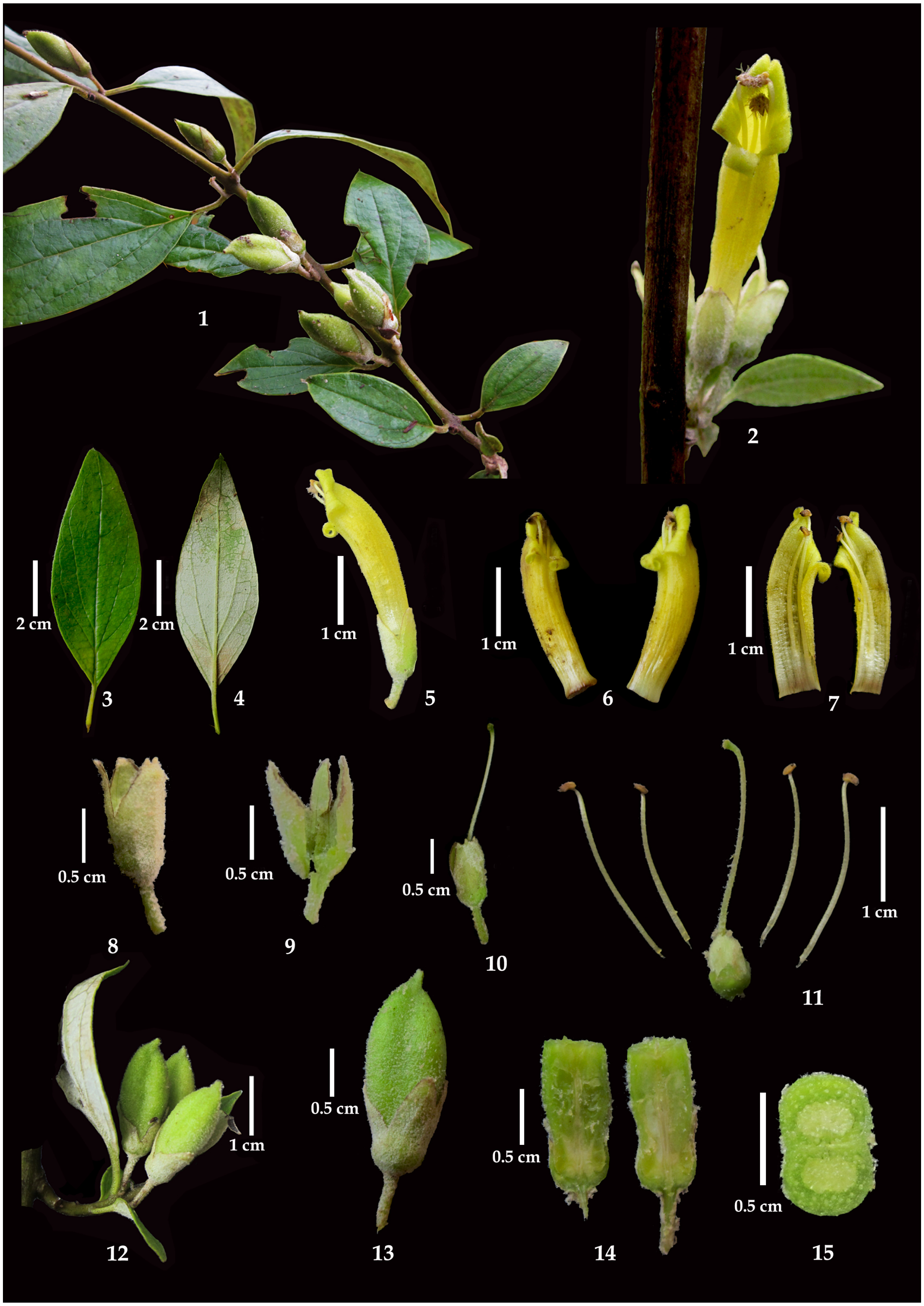

Fig. 2: *Brandisia rosea* W.W. Sm.var. *flava* C.E.C. Fisch.**1.** A fruiting twig; **2.** A flowering axils; **3.** Leaf-Dorsal view; **4.** Leaf-ventral view; **5.** A single flower- lateral view; **6.** Corolla; **7.** L.S. of corolla; **8.** Calyx; **9.** L.S. of calyx; **10.** Gynoecium with calyx; **11.** Androecium and gynoecium; **12.** Bunch of fruits; **13.** A capsule; **14.** L.S. of a capsule; **15.** T.S. of capsule showing Ovary.

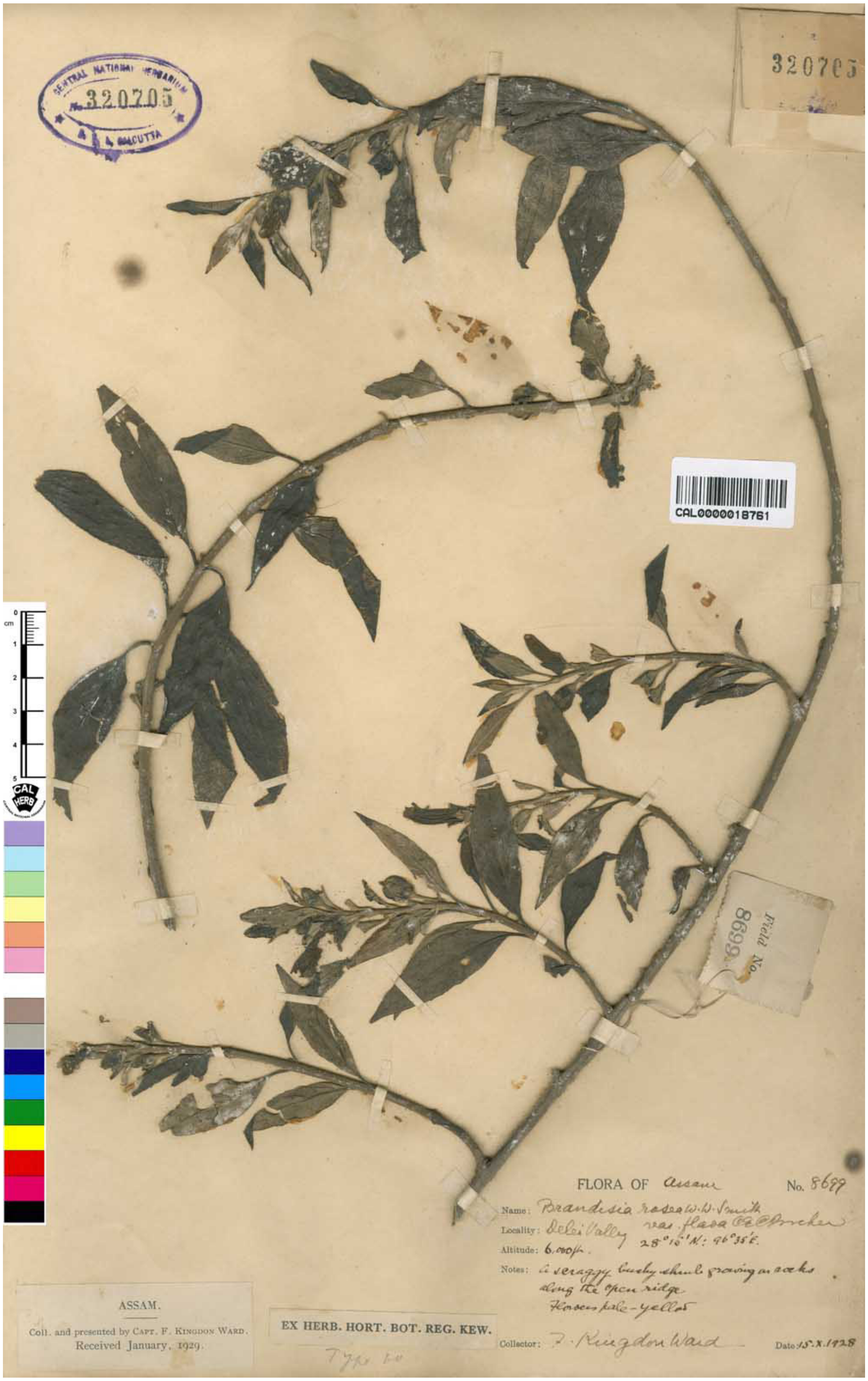
CENTRAL NATIONAL HERBARIUM
No. 320705
CALCUTTA
320705
CAL0000018761
cm
0
1
2
3
4
5
CAL HERB
Field No. 8699
FLORA OF Assam
No. 8699
Name: Brandisia rosea W.W. Smith var. flava
Locality: Delei Valley 28°15'N: 96°35'E.
Altitude: 6,000 ft.
Notes: A scraggy bushy shrub growing on rocks along the open ridge
Flowers pale-yellow
Collector: F. Kingdon Ward
Date: 15.X.1928
ASSAM.
Coll. and presented by Capt. F. Kingdon Ward.
Received January, 1929.
EX HERB. HORT. BOT. REG. KEW.
Type

Fig.3: Scanned image of lectotype of *Brandisia rosea* W.W. Sm.var. *flava* C.E.C. Fisch (CAL0000018761!)

is complete in all respect, having an original field number tag and well agrees with the protologue, therefore selected as the lectotype of *Brandisia rosea* W.W. Sm. var. *flava* C.E.C. Fisch. following the article 9.12 of the Melbourne code (McNeill & al., 2012) (Figure 3); while the herbarium sheet preserved at Kew (K000961206) as isolectotype.

TAXONOMIC TREATMENT

Brandisia rosea W.W. Sm. var. ***flava*** C.E.C. Fisch., Bull. Misc. Inform. Kew 1934 (2): 93. 1934; Deyuan & al. in Fl. China 18: 8. 1998; R.R. Mill in Grierson & D.G. Long (Eds.), Fl. Bhutan 2(3): 1235. 2001; H.J. Chowdhery & al. in G.S. Giri, A. Pramanik, & H.J. Chowdhery (Eds.), Materials Fl. Arunachal Pradesh 2: 209. 2008.

Type: INDIA, Arunachal Pradesh. Delai Valley, 28°15′ E & 96°35′ N, 6000ft, 15.10.1928, *F. Kingdon-Ward* 8699 (CAL0000018761! Lectotype designated here); isolectotype (K000961206!).

Shrubby epiphytes, 1–1.5 m tall. Stem erect or sometimes scandent, grey stellate tomentose. Leaves simple, cauline, opposite; petiole 5–7 mm; leaf blade ovate to oblong-lanceolate, 5–14 × 2.5–5 cm, abaxially brown tomentose, adaxially faintly pubescent, cuneate at base, margin entire, acute at apex. Flowers solitary or rarely in pairs, produced from leaf axil, *c.* 4 cm long, pedicellate, pale yellow. Pedicel c. 1 cm long, grey stellate tomentose. Bracteoles 2, linear, 4–6 mm, caducous. Calyx campanulate, 5–8 mm, hairy inside, persistent; calyx lobes 2, entire at apex, sometimes 2-lobed. Corolla yellow, oblique at mouth; tube cylindric, somewhat incurved, 2.5–3 cm long, outside grey stellate tomentose; lobes 5, unequal, reflexed over the tube, lower lip lobes ovate; upper lip deeply lobed. Stamens 4, didynamous, epipetalous, 2–2.2 cm long; filaments white, faintly pubescent; anthers brown, densely long hairy on the dorsal surface along the margin, dorsifixed. Ovary densely stellate tomentose, bilocular, placentation axile, ovules many; style *c.* 2.2 cm long, faintly pubescent, white; stigma discoid, green. Fruit a capsule, loculicidal, ovoid-globose, more or less compressed, 1.5 × 0.8 cm, acute at apex, faintly stellate tomentose, green.

Flowering and *Fruiting*: August–October.

Distribution: India: Arunachal Pradesh, Dibang Dihang district, Delai Valley, Kameng District and Tawang District); Bhutan (Mo Chu District); China (SE Tibet, NW Yunnan, Xizang).

Specimen examined: **India**, Arunachal Pradesh, Tawang District, Zemithang, 27°42′50″ N & 91°43′30″ E, 2438 m, 23.09.2016, *S. Panday* 74174 (CAL!).

Additional specimen examined: **India:** Arunachal Pradesh, Kameng District, Sebari Forest, 2000 m, 15.09.1964, *J. Joseph* 40023. **China:** S.E. Tibet, Tsarong, 3350 m, September 1921, *G. Forrest* 20320.

Habitat: The species is rare and was found in subtropical evergreen forest, growing on the old moist tree trunks of *Betula alnoides* Buch.-Ham. ex D. Don. associated with *Drynaria propinqua* (Wall. ex Mett.) Bedd., *Drynaria quercifolia* (L.) J. Sm., *Nephrolepis cordifolia* (L.) C. Presl, *Ophiopogon intermedius* D. Don, *Peperomia quadrifolia* (L.) Kunth, *Selaginella monospora* Spring, etc.

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